INDEX

SOVIET RADIOCHEMISTRY

Volume 11, Numbers 1-6, 1969

SOVIET RADIOCHEMISTRY
Volume 11, Numbers 1-6, 1969

(A translation of Radiokhimiya)

A

Afans'ev, Yu. A. - 430, 588, 590
Alimarin, I. P. - 501
Aloi, A. S. - 113
Andreev, A. G. - 72
Andreev, V. I. - 48
Antonov, P. G. - 301, 305
Avad, Khadi Kadom - 233

B

Babina, K. A. - 430
Barbanel', Yu. A. - 576
Belov, V. Z. - 386
Berezyuk, V. G. - 669
Beridze, G. I. - 713
Bernovskaya, R. N. - 592
Bezrogova, E. V. - 295, 699
Bochkarev, V. A. - 331
Bodashkova, I. F. - 129
Bogdanov, R. V. - 599, 604, 606
Bogdanov, Yu. A. - 592
Bol'shakov, K. A. - 101
Bondarevskii, S. I. - 464
Borbat, V. F. - 101
Borisov, V. V. - 101
Bryukhanov, V. A. - 356
Bulyanitsa, L. S. - 595
Bushvev, N. N. - 239
Bykhovtsov, V. L. - 471, 608

C

Chaikorskii, A. A. - 580
Chekmarev, A. M. - 226
Chernorukov, N. G. - 129
Chistyakov, V. M. - 439, 443
Chuburkov, Yu. T. - 153, 161, 171, 386
Chukhlantsev, V. G. - 550

D

Danilin, L. D. - 690
Davydov, A. V. - 105
Dedova, V. F. - 338
Do Khim Tyung - 568
Dolzhenko, Yu. K. - 217
Drozhzhin, V. M. - 674
Druzhinin, A. A. - 690

E

Egorov, V. N. - 542
Egorov, Yu. V. - 206, 482
Egorova, L. A. - 341
Éval'd, G. - 268, 473, 479

F

Filippov, A. P. - 527
Firsova, L. P. - 562, 568, 694, 716, 718
Fomin, V. V. - 547
Frolov, Yu. G. - 127
Funin, V. N. - 690

G

Gabov, N. I. - 558
Gavrilova, L. G. - 381
Gel'man, A. D. - 187, 398, 417
Gibalo, I. M. - 501
Gimmel'farb, F. B. - 709
Gladyshev, V. P. - 538
Gromov, V. V. - 592
Gryzina, V. V. - 364
Gudym, L. S. - 233
Gunder, O. A. - 116
Gusel'nikov, V. S. - 343
Gromov, V. V. - 81

H

Haissinsky, M. N. - 469

I

Ianovich, E. - 361
Il'inskaya, T. A. - 422
Il'menkova, L. I. - 532
Ilozheva, L. V. - 32
Iofa, B. Z. - 235, 356, 655, 660, 664
Isupov, V. K. - 258
Ivanov, N. A. - 501
Izosenkova, L. A. - 139

K

Kamenkovich, E. L. - 588, 590
Kapitanchuk, V. A. - 694
Kapshukov, I. I. - 454
Karpacheva, S. M. - 32
Karyakin, A. V. - 220
Kazakov, M. I. - 707
Kazas, T. S. - 335
Khalkin, V. A. - 256
Khar'ono, A. V. - 562
Khermann, A. - 611, 616
Khodov, M. A. - 724
Khonikevich, A. A. - 724
Khromova, M. M. - 585
Khusidman, M. B. - 467
Kirin, I. S. - 258
Kiselev, B. P. - 248
Koba, V. S. - 116
Kolesov, G. M. - 320
Kolokol'tsov, V. B. - 621
Komarov, E. V. - 94, 97, 99, 237, 450
Korintskaya, M. F. - 542
Korshunov, I. A. - 129, 133
Kotel'nikov, L. A. - 253, 601
Kovarskaya, E. N. - 705
Kovba, L. M. - 452, 585
Krasnov, K. S. - 335
Krestov, G. A. - 55, 193, 683
Krestova, N. V. - 55, 193, 683
Krivokhatskii, A. S. - 316
Krot, N. N. - 187, 398, 417
Krupatkin, I. L. - 372
Krutova, G. I. - 527
Krylov, V. N. - 94, 97, 99, 237, 450
Kuklin, Yu. S. - 716
Kukushkin, Yu. N. - 351
Kurdin, I. E. - 348
Kutsenko, N. V. - 72
Kuzin, V. I. - 422
Kuzina, M. G. - 84
Kuz'mina, M. A. - 351
Kuznetsov, R. A. - 253, 601
Kuznetsov, V. I. - 233

Kuznetsova, R. I. - 320
Kurchatova, L. N. - 201

L

Ladygin, I. N. - 229
Lanin, V. P. - 433
Lavrukhina, A. K. - 320
Levin, V. I. - 201
Lipovskii, A. A. - 39, 45, 84, 182, 640
Litvinenko, V. A. - 67
Lyubimov, A. S. - 206
Lyubtsev, R. I. - 48, 212

M

Macharashvili, G. R. - 713
Makarov, L. L. - 113
Makarova, T. P. - 286
Makhomalkina, S. M. - 343
Malinin, A. B. - 201
Malinin, G. V. - 426
Malyshev, V. V. - 320
Markov, V. K. - 542
Matyashchuk, I. V. - 472
Mefod'eva, M. P. - 187
Melikhov, I. V. - 263, 268, 473, 479
Melikhova, G. N. - 471, 608
Merkusheva, S. A. - 583
Mezhov, É. A. - 506
Mikhailichenko, A. I. - 348, 648
Mikhailova, A. I. - 353
Mikhailova, D. M. - 241
Mikhailova, N. K. - 576
Mikhailova, V. Ts. - 241
Mikheev, N. B. - 125, 611, 616
Mosevich, A. N. - 48
Moskvin, A. I. - 447
Moskvin, L. N. - 461
Mosulishvili, L. M. - 713
Muradova, G. A. - 220
Murav'ev, V. V. - 694, 718
Murin, A. N. - 464, 599

N

Nacheva, R. N. - 241
Nemodruk, A. A. - 220, 295, 699
Neshpor, V. S. - 467
Nevedov, V. D. - 250
Nikitina, S. A. - 39, 45, 182, 640
Nikolaev, D. S. - 674
Nikol'skii, B. P. - 48, 212, 724
Novgorodov, A. F. - 77
Novikov, A. I. - 217, 328, 338, 341, 458
Novikova, M. M. - 77

O

Obuchova, M. E. - 633
Olevskii, É. B. - 599, 604, 606

P

Pakhomov, L. G. - 133
Palei, P. N. - 105, 295, 699
Pal'shin, E. S. - 105
Pavlova-Verevkina, A. I. - 690
Pavlov-Verevkin, B. S. - 122, 721
Peretrukhin, V. F. - 417
Petrov, A. M. - 129
Pimenova, R. M. - 6
Podkorytova, N. V. - 111
Polunina, G. P. - 585
Polyakov, M. S. - 67
Polyukhov, V. G. - 364
Popov, Yu. S. - 364
Poskrebysheva, L. M. - 108
Pospelov, A. A. - 550
Posvol'skii, M. V. - 212
Prokhorov, V. M. - 310
Pushkarev, V. V. - 669
Pushlenkov, M. F. - 16, 97, 237, 450, 633

R

Rachev, V. V. - 290
Rakhmatulin, Ya. - 538
Raichev, Kh. - 256
Raicheva, V. - 361
Razumova, G. N. - 345, 554
Ridvan, M. - 660
Romanov, G. A. - 87, 455, 580, 702
Romanov, Yu. F. - 316
Rozanova, O. N. - 452
Rozen, A. M. - 90
Rudenko, N. P. - 233, 246
Ruzakin, V. I. - 217, 338, 341
Rykov, A. G. - 403, 408, 414, 439, 443, 454

S

Samartseva, A. G. - 489
Samodelov, A. P. - 435
Sanaeva, É. A. - 501
Sarbash, A. N. - 250
Savaskina, G. P. - 595
Schmidt, H. - 367
Semenov, S. I. - 356
Serebrennikov, V. V. - 108, 583
Seregin, P. P. - 464
Sevast'yanov, A. I. - 246
Shalaevskii, M. K. - 161, 386
Shchepetil'nikov, N. N. - 16
Shcherbakov, V. A. - 640
Shcherbakova, L. L. - 640
Shcherbakova, T. A. - 372
Shchetkoturova, E. K. - 458
Sheidina, L. D. - 705
Shestakov, B. I. - 461
Shestakova, I. A. - 461
Shesterikov, N. N. - 519
Shevelev, G. V. - 588, 590
Shilov, B. V. - 171
Shilov, V. P. - 391
Shlyamin, É. A. - 316
Shmidt, V. S. - 501, 510, 519, 573
Shuba, I. D. - 345, 554
Shvedov, V. P. - 301, 305, 358, 547
Simakin, G. A. - 472
Sinotova, E. N. - 250
Skoblo, A. I. - 26
Skorik, N. A. - 108, 111, 583
Skotnikov, A. S. - 90
Smelov, V. S. - 433
Smirnov, V. M. - 467
Smirnova, T. V. - 187
Sokolov, V. S. - 510, 573
Solntseva, L. V. - 87, 455, 702
Sotnikov, V. S. - 463
Spitsyn, N. M. - 101
Spitsyn, V. I. - 592
Spitsyn, Vikt. I. - 81, 611, 616
Stabrovskii, A. I. - 290
Starovoit, I. A. - 217, 328
Stebunov, O. B. - 621, 625, 630
Stepanov, A. V. - 286
Strizhov, S. G. - 358
Stupin, D. Yu. - 116
Sudakov, L. V. - 454
Suglobov, D. N. - 22, 26, 229
Suglobova, I. G. - 22, 229
Surin, V. M. - 290
Sventitskii, E. N. - 595
Sviridova, R. A. - 11

T

Tarasov, V. V. - 147
Telegina, L. I. - 235
Teplykh, L. A. - 120
Tikhomirov, V. N. - 592
Timofeev, G. A. - 403, 408, 414, 439, 443
Timofeev, S. A. - 250, 707
Tolmachev, Yu. M. - 422, 426

Tolstykh, B. L. - 463
Trunov, V. K. - 239, 452
Tsaletka, R. - 153, 161, 386, 496

U

Ukraintseva, É. A. - 588, 590
Ul'yanov, V. S. - 11

V

Vasil'ev, I. Ya. - 554
Vavilov, N. G. - 223, 276, 282, 376
Vdovenko, V. M. - 22, 26, 87, 223, 229, 276, 282, 376, 455, 595, 621, 625, 630, 640, 702, 724
Voden, V. G. - 633
Volkov, V. A. - 22

Y

Yadrintsev, V. B. - 426
Yagodin, G. A. - 147, 226
Yakovlev, G. N. - 403, 408, 414, 454
Yushchenko, A. S. - 655, 664

Z

Zaitsev, V. M. - 343
Zaitseva, N. G. - 361
Zaitseva, T. D. - 496
Zarubin, A. I. - 11
Zerekhov, V. G. - 72
Zharkov, A. P. - 532
Zolotov, Yu. A. - 139, 381
Zvara, I. - 153, 161, 171, 386
Zvarova, T. S. - 153

SOVIET RADIOCHEMISTRY
Volume 11, Numbers 1-6, 1969
(A translation of Radiokhimiya)

Volume 11, Number 1 January-February, 1969

	Engl.	Russ.
Extraction of Hexavalent Uranium by Di-(2-Ethylhexyl)-phosphoric Acid from Perchloric Acid Solutions with a High Perchloric Acid Concentration — A. A. Nemodruk	1	3
Extraction of Rare Earth Elements with Di-(2-Ethylhexyl)-orthoophosphoric Acid from Nitric Acid Solution — A. I. Mikhailichenko and R. M. Pimenova	6	8
Determination of the Association Constants of Uranyl with Diethylphosphoric Acid — V. S. Ul'yanov, R. A. Sviridova, and A. I. Zarubin	11	13
Study of the Rate of Extraction in Systems with Tributyl Phosphate. I. Extraction of HNO_3 — M. F. Pushlenkov and N. N. Shchepetil'nikov	16	19
Complexes of Uranium (IV) Halides with Ethyl Acetate and Acetonitrile — V. M. Vdovenko, V. A. Volkov, I. G. Suglobova, and D. N. Suglobov	22	26
Structure of Uranyl Complexes and Spectra in the Visible Region — V. M. Vdovenko, A. I. Skoblo, and D. N. Suglobov	26	30
Kinetics of the Extraction of Trivalent Iron from Perchloric Acid Solutions of Di-2-Ethylhexylphosphoric Acid in Synthine — S. M. Karpacheva and L. V. Ilozheva	32	37
The Use of Alkylammonium Salts to Dissolve Inorganic Compounds. III. Dissolution of Crystal Hydrates $UF_4 \cdot nH_2O$ in Solutions of Tridecylammonium Fluoride — A. A. Lipovskii and S. A. Nikitina	39	44
The Use of Alkylammonium Salts to Dissolve Inorganic Compounds. IV. The Solubility of Mixed Fluorides of U(IV) and Ce(III) in Solutions of Tridecylammonium Fluoride — A. A. Lipovskii and S. A. Nikitina	45	51
Adsorption of Trace Amounds of Niobium from Aqueous Solutions on Ashless Activated Platinized Charcoal — B. P. Nikol'skii, V. I. Andreev, A. N. Mosevich, R. I. Lyubtsev, and M. S. Polyakov	48	54
Thermal Characteristics of Crystalline Halides and Oxides of the Rare-Earth and Actinide Elements — G. A. Krestov and N. V. Krestova	55	62
Catalytic Activity of Thorium (IV) in the Hydrogen Peroxide—Thiosulfate System — V. A. Litvinenko	67	74
Determination of Radium and Thorium X in a Layer of Barium Sulfate — A. G. Andreev, V. G. Zherekhov, and N. V. Kutsenko	72	80
Cementation of Trace Amounts of Radioactive Isotopes of the Light Rare-Earth Elements and Ytterbium by Sodium Amalgam in the Presence of Macroquantities of Terbium, Erbium, and Lutetium — A. F. Novgorodov, M. M. Novikova, and V. A. Khalkin	77	85
BRIEF COMMUNICATIONS		
Structure of the Surface of Radioactive Crystals of Ba, Sr, and Ca Sulfates — V. V. Gromov and Vikt. I. Spitsyn	81	89
The Use of Alkylammonium Salts to Dissolve Inorganic Compounds. V. Absorption Spectra and Structure of Complex Compounds Formed in the Dissolution of $UO_2C_2O_4 \cdot 3H_2O$ in Solutions of Tetradecylammonium Oxalate — M. G. Kuzina and A. A. Lipovskii	84	91

Investigation of the Interaction of Uranium Tetrafluoride with Aqueous Solutions of Alkalies — V. M. Vdovenko, G. A. Romanov, and L. V. Solntseva 87 94
Extraction of Potassium Permanganate with Neutral Organophosphorus Compounds — A. M. Rozen and A. S. Skotnikov 90 96
Investigation of the Complex Formation of Pu(IV) with the Fluoride Ion in Solutions of $HClO_4$ by the Ion-Exchange Method — V. N. Krylov and E. V. Komarov 94 101
Investigation of the Complex Formation of Pu(IV) with the Fluoride Ion in Solutions of HNO_3 by the Ion-Exchange Method — V. N. Krylov, E. V. Komarov, and M. F. Pushlenkov .. 97 103
Investigation of the Complex Formation of Np(IV) with the Fluoride Ion in Solutions of $HClO_4$ by the Ion-Exchange Method — V. N. Krylov and E. V. Komarov 99 105
The Behavior of Ruthenium in Sulfuric Acid Solutions — K. A. Bol'shakov, N. M. Spitsyn, V. F. Borbat, and V. V. Borisov 101 107
Light Absorption Spectra of Oxalate Solutions of Protactinium (V) — A. V. Davydov, E. S. Pal'shin, and P. N. Palei 105 110
Compounds of Lanthanium, Yttrium, Scandium, and Thorium with Trihydroxyglutaric Acid — L. M. Poskrebysheva, N. A. Skorik, and V. V. Serebrennikov 108 113
Thorium Hexamethylenediaminetetraacetate — N. V. Podkorytova and N. A. Skorik 111 115
Study of the Influence of CsBr on the Phase Transition of CsCl by an Emanation Method — L. L. Makarov, A. S. Aloi, and D. Yu. Stupin 113 116
Study of the Radiation Stability of a Number of Vinyl Aromatic Polymers and Copolymers by the Method of IR Spectroscopy — O. A. Gunder and V. S. Koba 116 119
Radioactive Isotopes of Tellurium as Indicators of the Completeness of the Isolation of Polonium — L. A. Teplykh 120 122
Behavior of Iron-55 in the Purification of Sewage by Coagulation — B. S. Pavlov-Verevkin .. 122 124
Generators of Yttrium-90 and Lanthanum-140 — N. B. Mikheev 125 126

LETTERS TO THE EDITOR
Reply to the Letter of M. A. Ryazanov — Yu. G. Frolov 127 128

Volume 11, Number 2 March-April, 1969

Kinetics of Ion-Exchange Sorption of Yttrium from Solutions of Salts of Certain Elements — I. F. Bodashkova, A. M. Petrov, I. A. Korshunov, and N. G. Chernorukov 129 129
Some Problems in the Cocrystallization of Organic Compounds — I. A. Korshunov and L. G. Pakhomov 133 132
Extraction of Valence-Unsaturated Internal Complex Compounds. Tin (IV) 8-Hydroxyquinolinate — O. M. Petrukhin, Yu. A. Zolotov, and L. A. Izosenkova ... 139 139
Distribution of D2EHPA between Water and Various Organic Solvents — G. A. Yagodin and V. V. Tarasov 147 148
Experiments on the Chemistry of Element 104 — Kurchatovium. I. Development of a Method for Studying Short-Lived Isotopes — I. Zvara, Yu. T. Chuburkov, T. S. Zvarova, and R. Tsaletka 153 154
Experiments on the Chemistry of Element 104 — Kurchatovium. II. Chemical Investigation of the Isotope which Undergoes Spontaneous Fission with a Half-Life of 0.3 sec — I. Zvara, Yu. T. Chuburkov, R. Tsaletka, and M. R. Shalaevskii 161 163
Experiments on the Chemistry of Element 104 — Kurchatovium. III. Chemical Apparatus in the Cyclotron Beam — Yu. T. Chuburkov, I. Zvara, and B. V. Shilov 171 174
Use of Alkylammonium Salts for Dissolving Inorganic Compounds. IV. Dissolution of $U(C_2O_4)_2 \cdot nH_2O$ in Solutions of Tridecylammonium Fluoride — S. A. Nikitina and A. A. Lipovskii 182 187
Oxalate Compounds of Hexavalent Neptunium — M. P. Mefod'eva, N. N. Krot, T. V. Smirnova, and A. D. Gel'man 187 193

Temperature Coefficients of the Ionic Radii of Rare Earth and Actinide Elements – G. A. Krestov and N. V. Krestova 193 200
Isolation of Carrier-Free Yttrium-88 from a Strontium Target – V. I. Levin, L. N. Kurchatova, and A. B. Malinin 201 210
Hydrate Oxide Collectors in Radiochemistry. III. Nature of the Heterogeneity of Sorption Centers of Some Preparations of Active Manganese Dioxide – Yu. V. Egorov and A. S. Lyubimov 206 215
Investigation of Complex Formation by the Dialysis Method. IV. Calculation of Equilibrium Constant with Simultaneous Exchange of Several Ligand Groups – B. P. Nikol'skii, M. V. Posvol'skii, and R. I. Lyubtsev 212 221

BRIEF COMMUNICATIONS
Separation of Potassium, Calcium, and Scandium by Coprecipitation with Iron Hydroxide – A. I. Novikov, V. I. Ruzankin, Yu. K. Dolzhenko, and I. A. Starovoit 217 227
Formation of Polymeric Compounds by Uranyl Nitrate in Tributyl Phosphate Extracts – A. A. Nemodruk, A. V. Karyakin, and G. A. Muradova 220 229
Mechanism of the Extraction of Uranium (IV) from Nitric Acid Solutions by Monobasic Organophosphorus Acids – V. M. Vdovenko and N. G. Vavilov 223 232
Study of the Extraction Separation of Elements by Reverse Phase Chromatography on Paper – G. A. Yagodin and A. M. Chekmarev 226 234
Solvolysis of Uranyl Nitrate in Alcohol Solutions in the Presence of Tridecylamine – V. M. Vdovenko, I. N. Ladygin, I. G. Suglobov, and D. N. Suglobov 229 236
Extraction of Technetium and Rhenium with 8-Mercaptoquinoline – V. I. Kuznetsov, L. S. Gudym, N. P. Rudenko, and Khadi Kadom Ayad 233 240
Extraction of Complex Acids by Oxygen-Containing Solvents. XIV. Intereffect of Elements in Extraction by Ketones – B. Z. Iofa and L. I. Telegina 235 242
Investigation of Complex Formation of $Np^{(IV)}$ with Fluoride Ion in HNO_3 Solutions by the Ion-Exchange Method – V. N. Krylov, E. V. Komarov, and M. F. Pushlenkov 237 244
Interaction of Thorium Tungstate with Sodium and Lithium Tungstates – V. K. Trunov and N. N. Bushuev 239 245
Stability Constants of Chloride Complexes of Indium in the Presence of Alkali Metal Nitrates as the Base Electrolyte – D. M. Mikhailova, R. N. Nacheva, and V. Ts. Mikhailova 241 247
Stability Constants of Magnesium 2-Methyl-, 5,7-Dibromo-, and 8-Hydroxyquinolinates Determined with ^{28}Mg – A. I. Sevast'yanov and N. P. Rudenko 246 251
Separation of Radium and Barium through the Mobilities of the Ions – B. P. Kiselev 248 252
Study of Kinetics of Isotope Exchange by the Central Atom in the System $Ph_2Te - Ph_2TeCl_2 - CHCl_3$ – V. D. Nefedov, E. N. Sinotova, A. N. Sarbash and S. A. Timofeev 250 254
Photoactivation Analysis of Antimony – Zirconium Ionite – L. A. Kotel'nikov and R. A. Kuznetsov 253 256
Effect of the Form of the Column on Ion Exchange Chromatography Processes – Kh. Raichev and V. A. Khalkin 256 259
Use of Ozone for Synthesis of Alkali Metal Periodates Labeled with the Isotopes ^{131}I, ^{133}I, and ^{135}I – V. K. Isupov and I. S. Kirin 258 260

Volume 11, Number 3 May-June, 1969

Adsorption-Kinetic Conditions of Coprecipitation. II. Steady-State Entrainment of a Microimpurity with a Nonstable Structure of the Interphase – I. V. Melikhov 263 265
Detailed Investigation of the Mechanism of Coprecipitation. II. Study of the System NaCl – AgCl – H_2O – I. V. Melikhov and G. Éval'd 268 270

Extraction of Uranium (VI) from Aqueous Nitric Acid Solutions by a Mixture of Di-n-Heptylphosphinic Acid and Tri-n-Butyl Phosphate in Toluene – V. M. Vdovenko and N. G. Vavilov 276 279
Extraction of Uranium (VI) from Aqueous Nitric Acid Solutions by Di-n-Heptylphosphinic Acid in Toluene – V. M. Vdovenko and N. G. Vavilov 282 286
Use of the Electromigration Method in Investigating Complex Formation of U(VI) with EDTA – A. V. Stepanov and T. P. Makarova 286 290
Investigation of Cathode Deposition of Neptunium Compounds on Metals. III. Mechanism of Electrodeposition of Neptunium Compounds from Aqueous Solutions and the Structure of Cathodic Deposits – V. M. Surin, A. I. Stabrovskii, and V. V. Rachev 290 295
Change in the Valence States of Plutonium in Solutions of Nitric, Hydrochloric, Sulfuric, and Perchloric Acids under Irradiation with Ultraviolet Light – P. N. Palei, A. A. Nemodruk, and E. V. Bezrogova. 295 300
Study of the Conditions of Amalgam Formation of Rare Earth Elements in Electrolysis of Aqueous Acetate – Tartrate Electrolytes – P. G. Antonov and V. P. Shvedov . . 301 307
Separation of Rare Earth Elements of the Yttrium Subgroup by Electrolysis with a Mercury Cathode in an Acetate – Tartrate Medium – P. G. Antonov and V. P. Shvedov 305 311
Kinetics of Adsorption of Strontium-90 by the Bottom of a Still Reservoir – V. M. Prokhorov 310 317
Characteristics of Loop Preparation of Berkelium in a Reactor – M. A. Bak, A. S. Krivokhatskii, Yu. F. Romanov, and É. A. Shlyamin. 316 325
Radiochemical Investigation of the Products from the Spallation of Praseodymium Nuclei by Protons with an Energy of 660 MeV – A. K. Lavrukhina, R. I. Kuznetsova, G. M. Kolesov, and V. V. Malyshev 320 330

BRIEF COMMUNICATIONS

Separation, Concentration, and Determination of the Valence Forms of Plutonium (III, IV, VI) by the Method of Coprecipitation with Zirconium and Iron Hydroxides – A. I. Novikov and I. A. Starovoit. 328 339
Extraction of Transplutonium Elements by Butyric Acid – V. A. Bochkarev 331 341
Influence of Structural Factors on the Thermodynamic Characteristics of the Extraction of Salts of Basic Dyes. VII. Solvation of the Dye during Extraction with Chloroform – T. S. Kazas and K. S. Krasnov 335 345
Separation of Scandium, Titanium, and Vanadium by Coprecipitation with Iron and Zirconium Hydroxides – A. I. Novikov, V. I. Ruzakin, and V. F. Dedova. 338 347
Separation of Sodium, Magnesium, and Aluminum by Coprecipitation with Ferric Hydroxide – A. I. Novikov, L. A. Egorova, and V. I. Ruzakin 341 350
Rapid Chromatographic and Electrophoretic Methods of Separating the Tetra- and Hexavalent States of Tellurium – V. M. Zaitsev, V. S. Gusel'nikov, and S. M. Makhomalkina 343 352
Determination of Rhenium and Germanium by the Neutron Activation Method – G. N. Razumova and I. D. Shuba 345 354
Complex Formation of Neodymium and Gadolinium with Nitrate Ions in Aqueous Solutions – A. I. Mikhailichenko and I. E. Kurdin 348 356
Isotopic Exchange of Bromine in the $[Pt(DMSO)Br_3]^-$ Ion – Yu. N. Kukushkin and M. A. Kuz'mina 351 358
Mechanism of the Absorption of Alkaline Earth Elements by Bone Tissue – A. I. Mikhailova. 353 360
Investigation of the Hydrolysis of Antimony (V) in Solutions of Hydrochloric Acid with the Aid of the Mössbauer Effect – V. A. Bryukhanov, B. Z. Iofa, and S. I. Semenov 356 362
The Use of Filters for the Purification of the Secondary Vapor Formed in the Evaporation of Radioactive Sewage – V. P. Shvedov and S. G. Strizhov 358 364

Chemical Behavior of Radioactive Rhenium Atoms during the Thermal Annealing of NH_4ReO_4 Crystals, Irradiated with 660 MeV Protons – N. G. Zaitseva, E. Ianovich, and V. Raicheva 361 366
Sensitivity of β-Radiation End-Window Counters of the MST-17, SI-2B, and SBT-7 Types to the γ- and Conversion Radiation of ^{238}Pu and ^{241}Am – V. V. Gryzina, V. G. Polyukhov, and Yu. S. Popov 364 370

Volume 11, Number 4 July-August, 1969

Adsorption of Copper from HF/HNO_3 Mordants on the Surface of Silicon – H. Schmidt.... 367 373
Extraction of Phosphoric Acid by Tributyl Phosphate – I. L. Krupatkin and T. A. Shcherbakova..... 372 378
Extraction of Vanadium (V) from Aqueous Nitric Acid Solutions by Di-(2-ethylhexyl)-Phosphoric Acid – V. M. Vdovenko and N. G. Vavilov 376 384
Synergistic Effects in the Extraction of Cobalt (II) with 1-Phenyl-3-methyl-4-benzoylpyrazolone-5 – Yu. A. Zolotov and L. G. Gavrilova..... 381 389
Experiments on the Chemistry of Element 103: Adsorption of the Chloride from a Gas Flux – Yu. T. Chuburkov, V. Z. Belov, R. Tsaletka, M. R. Shalaevskii, and I. Zvara 386 394
The Heptavalent State of the Transuranium Elements. V. Interaction of Neptunium (VII) with Reducing Agents in Alkaline Solutions – V. P. Shilov and N. N. Krot 391 399
The Heptavalent State of the Transuranium Elements. VI. Study of Certain Methods of Oxidation of Plutonium (VI) – Yu. A. Komkov, V. P. Peretrukhin, N. N. Krot, and A. D. Gel'man 398 407
Investigation of Redox Reactions of the Actinide Elements. IX. Kinetics of the Reaction between Neptunium (IV) and Plutonium (IV) in Perchlorate Media – A. G. Rykov, G. A. Timofeev, and G. N. Yakovlev..... 403 413
Investigation of Redox Reactions of the Actinide Elements. X. Kinetics of the Reduction of Plutonium (IV) by Metallic Lead, Copper, and Silver..... 408 418
Investigation of Redox Reactions of the Actinide Elements. XI. Kinetics of the Reduction of Uranium (VI) and Neptunium (VI) by Solid Metals 414 425
Electrolytic Reduction of Uranyl in Oxalate Solutions – V. F. Peretrukhin, N. N. Krot, and A. D. Gel'man 417 428
Absorption Spectra of Uranium Oxides in the Region of Compositions from $UO_{2.50}$ to $UO_{2.64}$ – T. A. Il'inskaya, V. I. Kuzin, and Yu. M. Tolmachev..... 422 433
Liberation of Atomic Oxygen in the Thermal Decomposition of Certain Oxides of Uranium – G. V. Malinin, V. B. Yadrintsev, and Yu. M. Tolmachev 426 438

BRIEF COMMUNICATIONS

Thermochemistry of the Extraction of Nitrates of the Lanthanides by Tributyl Phosphate (TBP) – Yu. A. Afanas'ev and K. A. Babina..... 430 443
Dissociation of Di-2-ethylhexylphosphoric Acid in Aqueous Solution – V. S. Smelov and V. P. Lanin..... 433 445
Extraction of Scandium by Tributyl Phosphate from Perchloric Acid Solutions – A. P. Samodelov 435 447
Investigations of Redox Reactions of the Actinide Elements. XII. Kinetics of Reactions in the Systems Uranium (VI) – Iron (III) – Lead (0) and Neptunium (V) – Plutonium (IV) – Lead (0) – A. G. Rykov, G. A. Timofeev, and V. M. Chistyakov 439 450
Investigations of Redox Reactions of the Actinide Elements. XIII. Kinetics of the Reactions of Neptunium (IV) – Plutonium (VI) in Perchlorate Solutions – A. G. Rykov, G. A. Timofeev, and V. M. Chistyakov 443 455

Complex Formation of the Actinides with Anions of Acids in Aqueous Solutions – A. I. Moskvin 447 458
Investigation of the Complex Formation of $Zr^{(IV)}$ with the Fluoride Ion in Solutions of $HClO_4$ and HNO_3 by the Method of Ion Exchange – V. N. Krylov, E. V. Komarov, and M. F. Pushlenkov 450 460
Investigation of the System $UMo_2O_8 - UW_2O_8$ – O. N. Rozanova, L. M. Kovba, and V. K. Trunov 452 463
Polymorphic Transformation in Cm_2O_3 under the Action of Internal Irradiation – I. I. Kapshukov, L. V. Sudakov, A. G. Rykov, and G. N. Yakovlev 454 465
Heat of Formation of UOF_2 – V. M. Vdovenko, G. A. Romanov, and L. V. Solntseva 455 466
Separation of Arsenic, Selenium, and Bromine by Coprecipitation with Ferric Hydroxide – A. I. Novikov and E. K. Shchekoturova 458 468
Production of ^{234}Th (UX_1) by the Method of Partition Chromatography – B. I. Shestakov, I. A. Shestakova, and L. N. Moskvin 461 471
Production of a Pure Surface of Silicon. I. – V. S. Sotnikov and B. L. Tolstykh 463 473
Chemical Consequences of Nuclear Conversions in Compounds of Tin, Iron, and Cobalt, Studied by the Mössbauer Method and Radiochemical Analysis – A. N. Murin, S. I. Bondarevskii, and P. P. Seregin 464 474
Investigation of an Irradiated Hexagonal Nitride – M. B. Khusidman, V. S. Neshpor, and V. M. Smirnov 467 477

LETTERS TO THE EDITOR
Radiocolloids and the Solubility Product – M. N. Haissinsky 469 479
Extraction of Uranium from Solutions of Trichloroacetic and Acetic Acids with Binary Mixtures of Alkyl Phosphates – V. L. Bykhovtsov and G. N. Melikhova 471 480
Some Electrochemical Properties of Heptavalent Neptunium – G. A. Simakin and I. V. Matyashchuk 472 481

Volume 11, Number 5 September-October, 1969

Detailed Investigation of the Mechanism of Coprecipitation. III. Causes of the Linearity of the Distribution in the System $NaCl-AgCl-H_2O$ – I. V. Melikhov and G. Eval'd 473 485
Detailed Investigation of the Mechanism of Copreciptation. IV. Mechanism of the Sorption of Ag by a NaCl Precipitate during Isothermal Crystallization – I. V. Melikhov and G. Éval'd 479 491
Hydroxide Collectors in Radiochemistry. IV. Two Approaches to Describing the Secondary Sorption of Ionic Microcomponents – Yu. V. Egorov 482 494
Study of the Adsorption of Americium on the Surface of Polished Platinum – A. G. Samartseva 489 502
Separation of Zirconium and Hafnium from Other Elements by Adsorption on Silica Gel from Mixed Solutions – R. Tsaletka and T. D. Zaitseva 496 510
Extraction of Niobium and Tantalum from Hydrochloric Acid Solutions by Amines – I. P. Alimarin, I. M. Gibalo, N. A. Ivanov, and É. A. Sanaeva 501 515
Influence of the Association of Molecules of Amine Salts on Extraction of Metal Salts by Extraction Reagents – V. S. Shmidt and É. A. Mezhov 506 520
Extraction of Nitric Acid and Nitrosonitrates of Ruthenium by N,N-Dialkylamides – V. S. Sokolov and V. S. Shmidt 510 525
Extraction of Uranyl Nitrate by N,N-Dialkylacetamides – V. S. Sokolov, É. G. Teterin, N. N. Shesterikov, and V. S. Shmidt 519 535
Interaction of Oxides of Nitrogen with Components of the Extraction Reagent – Diluent System – A. P. Filippov and G. I. Krutova 527 544

Influence of Silicic Acid on the Behavior of Niobium in Nitric Acid Solutions – A. P. Zharkov and L. I. Il'menkova 532 550
Reduction of Niobium on a Mercury Cathode – V. P. Gladyshev and Ya. Rakhmatulin..... 538 556
Isolation of the Isotope Thorium-229 and Investigation of Its Spectroscopic Properties – V. N. Egorov, M. F. Korintskaya, and V. K. Markov 542 560
Separation of the Alkaline Earth Elements by the Method of Focusing Ion Exchange – V. P. Shvedov and V. V. Fomin 547 565
Change in Zirconyl Phosphate Precipitates as a Result of Freezing – L. M. Sharygin, A. A. Pospelov, and V. G. Chukhlantsev 550 568
Determination of Trace Impurities in Indium Antimonide by a Neutron Activation Method – I. Ya. Vasil'ev, G. N. Razumova, and I. D. Shuba 554 573
Establishment of an Organic Bond by a Hot Phosphorus-32 Atom in a Mixture of CCl_4 – C_6H_6 – N. I. Gabov 558 577
Reactions of T^+ Ions with Solid Pyridine – L. P. Firsova and A. V. Khar'ono 562 581
Reactions of Accelerated Tritium Ions in Benzene–Naphthalene Mixtures – L. P. Firsova and Do Kim Tyung 568 587

BRIEF COMMUNICATIONS

Investigation of the Extraction of Various Actinide Elements by N,N-Dialkylacetamides from Nitric Acid Solutions – V. S. Shmidt and V. S. Sokolov 573 593
Study of the Complex Formation of $Am^{(III)}$ with the Cl^- Ion in Aqueous Solutions by the Method of Spectrophotometry – Yu. A. Barbanel' and N. K. Mikhailova 576 595
Magnetic Susceptibility of Heptavalent Neptunium – A. A. Chaikhorskii and G. A. Romanov. 580 598
Uranium (IV) Hexamethylenediaminetetraacetate – S. A. Merkusheva, N. A. Skorik, and V. V. Serebrennikov 583 600
Investigation of Binary Oxides of Erbium and Uranium – L. M. Kovba, G. P. Polunina, and M. M. Khromova 585 601
Thermodynamic Investigation of Crystal Hydrates of Nitrates of the Lanthanides. I. Hexahydrates of Nitrates of Lanthanum, Cerium (III), and Neodymium – Yu. A. Afanas'ev, É. A. Ukraintseva, G. V. Shevelev, and E. L. Kamenkovich ... 588 603
Thermodynamic Investigation of Crystal Hydrates of Nitrates of the Lanthanides. II. Tetrahydrates of Nitrates of Lanthanum, Cerium (III), and Neodymium – Yu. A. Afanas'ev, E. A. Ukraintseva, G. V. Shevelev, and E. L. Kamenkovich .. 590 605
The State of Microquantities of Niobium-95 and Technetium-99 in Sea Water – V. I. Spitsyn, R. N. Bernovskaya, Yu. A. Bogdanov, V. V. Gromov, and V. N. Tikhomirov 592 607
Mechanism of the Distribution of Mineral Acids between Aqueous Solutions and the Diisoamyl Ester of Methylphosphonic Acid (DAMP). I. Interactions in the System Hydrogen Fluoride–DAMP – V. M. Vdovenko, L. S. Bulyanitsa, G. P. Savoskina, and E. N. Sventitskii 595 609
Radiation Chemical Transformations of Atoms in Single Crystals of KCl – R. V. Bogdanov, A. N. Murin, and É. B. Olevskii 599 612
Photoactivation Analysis of a Phosphorus–Zirconium Ion-Exchange Resin – L. A. Kotel'nikov and R. A. Kuznetsov..... 601 614
Distribution of Phosphorus Recoil Atoms According to Valence Forms in Deformed Alkali Halide Crystals – R. V. Bogdanov and É. B. Olevskii 604 616
Influence of S^{2-} Ions on the Chemical State of Phosphorus Recoil Atoms in KCl – R. V. Bogdanov and É. B. Olevskii 606 617

LETTERS TO THE EDITOR

Peculiarities of Synergism in the Extraction of Uranium from Solutions of Nitric Acid with an Equimolar Mixture of D2EHPA–TBP in Kerosene – V. L. Bykhovtsev and G. N. Melikhova 608 619

Volume 11, Number 6 November-December, 1969

Thermodynamic Study of Solid Solutions $SrHPO_4$–$BaHPO_4$ – Vikt. I. Spitsyn, N. B. Mikheev, and A. Khermann 611 621

Thermodynamic Study of the Distribution of a Microcomponent between a Solid Solution Consisting of Two Macrocomponents and an Aqueous Phase, with the Cocrystallization of Calcium with a Solid Solution of Strontium and Barium Hydrophosphates as an Example – N. B. Mikheev, Vikt. I. Spitsyn, and A. Khermann 616 626

Relaxation Processes during Complex Formation. III. Influence of Anions on the Relaxation Effectiveness of Paramagnetic Cations – V. M. Vdovenko, V. B. Kolokol'tsov, and O. B. Stebunov 621 630

Relaxation Processes during Complex Formation. IV. Determination of the Stability Constants of the Complexes from the Data of the Proton Relaxation Method – V. M. Vdovenko and O. B. Stebunov 625 635

Relaxation Processes during Complex Formation. V. Determination of the Stability Constants of Strong Complexes by the NMR Method in the Case of Unknown Equilibrium Concentrations of the Ligand – V. M. Vdovenko and O. B. Stebunov 630 640

Complex Formation in Americium with Caprinohydroxamic Acid – V. G. Voden, M. E. Obukhova, and M. F. Pushlenkov 633 644

Investigation of Complex Formation in the Extraction System UO_2^{2+}–HF–HNO_3–TOA by Spectroscopic Methods – V. M. Vdovenko, A. A. Lipovskii, S. A. Nikitina, L. L. Shcherbakova, and V. A. Shcherbakov 640 651

Study of Extraction Equilibria in the System Di-(2-ethylhexyl)-phosphoric Acid–Octane $-Tm^{3+}-H^+-Na^+-ClO_4^-$–Water – A. I. Mikhailichenko 648 660

Extraction of Complex Acids by Oxygen-Containing Solvents. X. Mechanism of the Extraction of Hexavalent Polonium from Solutions of Hydrochloric Acid – B. Z. Iofa and A. S. Yushchenko 655 668

Extraction of Complex Acids with Oxygen-Containing Organic Solvents. XI. Extraction of Tellurium (IV) from Solutions of Hydrobromic and Hydroiodic Acids – B. Z. Iofa and M. Ridvan 660 673

Extraction of Complex Acids by Oxygen-Containing Solvents. XII. Extraction of Polonium from Solutions of Hydrobromic Acid – B. Z. Iofa and A. S. Yushchenko 664 677

Study of the Interaction of Radioactive Trace Elements in Aqueous Solutions with Alkylarylsulfonic Acids by the Method of Foam Formation. III. Influence of Complex Formers on the Sorption of ^{90}Y and ^{90}Sr by a Foam of Alkylarysulfonic Acids – V. V. Pushkarev and V. G. Berezyuk. 669 682

Geochemical Balance of Radioactive Elements in the Basins of the Black Sea and Sea of Azov. II. The Balance of Thorium Isotopes – D. S. Nikoaev, V. M. Drozhzhin, K. F. Lazarev, and O. P. Korn 674 688

Dependence of the Interionic Distances of Crystalline Halides of Francium and Astatides of the Alkali Metals on Temperature – G. A. Krestov and N. V. Krestova 683 698

Radiochemical Purification of a High-Activity Preparation of Iron-55 – L. D. Danilin, V. N. Funin, A. A. Druzhinin, and A. I. Pavlova-Verevkina. 690 706

Investigation of Processes of Interaction of Accelerated T^+ Ions Solid Targets by the Method of Layer-by-Layer Irradiation – L. P. Firsova, V. V. Murav'ev, and V. A. Kapitanchuk 694 711

BRIEF COMMUNICATIONS

Rapid Determination of Various Forms of Silicic Acid in Solutions of Uranyl Nitrate – A. A. Nemodruk, P. N. Palei, and E. V. Bezrogova. 699 716

Photocolorimetric Method of Determining Fluoride Ions in Solutions of Tetravalent Uranium – V. M. Vdovenko G. A. Romanov, and L. V. Solntseva 702 718

Method of Isolation of ^{233}Pa – L. D. Sheidina and E. N. Kovarskaya 705 721
Separation of Phenyl Derivatives of Bismuth by the Method of Thin-Layer Chromatography S. A. Timofeev and M. I. Kazakov 707 722
Determination of Radium-226 and Strontium-90 in Biological Samples Treated with Calcium Phosphates – F. B. Gimmel'farb 709 723
Quantitative Determination of the Gold Content in Certain Wines by the Neutron Activation Method – G. I. Beridze, G. R. Macharashvili, and L. M. Mosulishvili 713 726
Influence of the Current Density of T^+ Ions on the Distribution of Activity in the Reaction Products of Tritium with Benzene – Yu. S. Kuklin and L. P. Firsova 716 729
Yields of Labeled Compounds in Irradiation of Targets of Various Thicknesses with Fluxes of Tritium Ions – V. V. Murav'ev and L. P. Firsova 718 730
Behavior of Trace Amounts of Americium in the Process of Coagulation Deactivation of Sewage – B. S. Pavlov-Verevkin 721 734

OBITUARY
Yakov Il'ich Zil'berman (1901-1969) – V. M. Vdovenko, B. P. Nikol'skii, M. A. Khodov, and A. A. Khonikevich 724 734

INDEX
Author Index, Volume 11, Numbers 1-6, 1969 729
Tables of Contents, Volume 11, Numbers 1-6, 1969 733